Compaq DECprint Supervisor (DCPS) for OpenVMS

Release Notes

June 2001

These release notes describe restrictions, usage hints, and other useful information for DECprint Supervisor (DCPS) for OpenVMS.

Revision/Update Information:	These release notes supersede all other documentation.
Operating System & Versions:	OpenVMS Alpha Version 6.2, 7.2-1 or 7.3 OpenVMS VAX Version 5.5-2, 7.2 or 7.3
Software Version:	DECprint Supervisor (DCPS) for OpenVMS, Version 2.0

The *DECprint Supervisor* documentation set is available on CD-ROM.

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Preface

Introduction

The primary source of information about DECprint Supervisor (DCPS) for OpenVMS, Version 2.0 is the following set of software manuals:

- *DECprint Supervisor for OpenVMS Software Installation Guide*

- *DECprint Supervisor for OpenVMS System Manager's Guide*

- *DECprint Supervisor for OpenVMS User's Guide*

Release Notes Contents

These release notes provide detail on the following:

- Product changes since previous versions. Some changes provide new features or new printer support. Other changes have been made to correct problems with earlier versions.

- Restrictions in DECprint Supervisor Version 2.0.

- Additional information about DECprint Supervisor

SPD Contents

For information on licensing requirements and the features available with each license, see the DECprint Supervisor Software Product Description (SPD 44.15.xx).

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DCPS Version 2.0 Information

This section describes changes included in DCPS V2.0. You can find more information for several of these changes elsewhere in these release notes.

1.1 DCPS Version 2.0 Changes

1.1.1 DCPS Licenses Eliminated

Starting with DCPS V2.0, the need for DCPS-OPEN and DCPS-PLUS licenses has been eliminated. The right to use all features of DCPS is now included with the OpenVMS operating system license.

1.1.2 New Printers Supported

DCPS V2.0 adds support for the following printers:

    HP Color LaserJet 4500
    HP Color LaserJet 4550
    HP LaserJet 2100
    HP LaserJet 4050
    HP LaserJet 8100
    HP LaserJet 8150
    Lexmark Optra C710
    Lexmark Optra S 1250
    Lexmark Optra S 1255
    Lexmark Optra S 1650
    Lexmark Optra S 2450
    Lexmark Optra S 2455
    Lexmark Optra Se 3455
    Lexmark Optra T610
    Lexmark Optra T612
    Lexmark Optra T614
    Lexmark Optra T616
    Lexmark Optra W810
    Tektronix Phaser 740
    Tektronix Phaser 750
    Tektronix Phaser 850
    Xerox DocuPrint N2025
    Xerox DocuPrint N2125
    Xerox DocuPrint N2825
    Xerox DocuPrint N3225
    Xerox DocuPrint N4025

You can find more information in Chapter 4 of these release notes.

1.1.3 Installation Procedure Changed

When installing DCPS when no previous DCPS version is installed, the installation procedure asks about the location for layup files. Previously, if the default location was accepted, the procedure would indicate the directory did not exist and ask if it should be created. Since this directory will always be created regardless of the answer to the question, the installer will no longer be told the directory does not exist and will no longer be asked if it should be created. The installer will continue to be asked about creating the directory if the default location is not chosen.

1.1.4 Tray Names Added

The front input tray on the GENICOM LN28 printer can now be selected with the name MULTIPURPOSE in addition to the name FRONT.

Input tray 1 on the HP LaserJet 4000 and 4050 printers can now be selected with the name MULTIPURPOSE in addition to the name TRAY_1.

1.2 DCPS Version 2.0 Fixes

The following problems are fixed in DCPS V2.0.

1.2.1 Output Trays Not Selectable

With DCPS V1.8, it was not possible to select output trays on the Lexmark Optra S 1855 and the Tektronix Phaser 780 printer.

1.2.2 PCL Translator Character Incorrect

When using the Swedish/Finnish character set, the DCPS PCL translator would print the 'å' character incorrectly as 'á'.

1.2.3 Help File Incomplete

With DCPS V1.8, part of the online help about Lexmark printers was missing from the help file.

1.2.4 IVP Fails with ODS-5 Extended File Parsing

If the installation process was running with ODS-5 file parsing (SET PROCESS=EXTENDED), the DCPS IVP would fail.

2
DCPS Restrictions

The following sections identify the current restrictions that exist with DECprint Supervisor. See *DECprint Supervisor for OpenVMS System Manager's Guide* and *DECprint Supervisor for OpenVMS User's Guide* for printer-specific restrictions.

2.1 Job Remains in Starting State for Raw TCP/IP Queue

If you set up a DCPS queue that uses a raw TCP/IP connection and specify an incorrect TCP port number for the printer, any print jobs that you submit to the queue will remain in a starting state. DCPS cannot determine that you have provided an incorrect port number, because the network failure that it receives is no different than if the printer had been busy or offline.

Note that a print job in a raw TCP/IP queue may remain in a starting state for other reasons as well.

Check the documentation for your printer, network interface card, print server, or terminal server to determine the correct TCP port number to use. The TCP port number may also be listed in Table A–1.

2.2 Connection Terminations for Raw TCP/IP Queue

You may get CONTERMINATED errors for long print jobs when using raw TCP/IP connections. For jobs that consist of a single file or only use the native PostScript capability of the printer (for example, they do not use native PCL), these errors are most likely to occur at the end of the job, with job trailer pages (if specified for the queue) and print job accounting (if enabled) being lost. For other jobs, these errors may occur in the middle of the job, with subsequent documents as well as the trailer pages and accounting information being lost. DCPS requeues the terminated jobs, placing them in a Holding state so that you can reprint them once you resolve the termination problem.

Some network devices, including the HP JetDirect cards, drop a TCP/IP connection if they do not receive any input from the host system within a specified amount of time. This is a feature, meant to prevent host software from monopolizing the device. DCPS, however, waits for the printer to acknowledge that previous documents are printed before switching from PostScript to some other native printer language and also before printing a trailer page and gathering accounting information. Even though the printer may be busy, the NIC may not receive any more input from DCPS before the timeout is reached.

If your NIC allows you to alter the TCP/IP idle timeout value, you can work around this problem by disabling or increasing the timeout. Check your NIC documentation to determine if this is possible, and how to do it. Then release any requeued jobs for which desired output was lost, and delete the other requeued jobs.

Note that it is the length of a job in time (versus size) that is important. For example, a very small PostScript program can take a very long time to print. Hence, it is difficult to predict how large a timeout is adequate.

2.3 NOT_READY Warnings for Unavailable Raw TCP/IP Printer

If a job is queued to a printer that uses a raw TCP/IP connection, and the printer is busy or offline, you will get NOT_READY warning messages for the printer.

If you believe or determine that the printer is busy, you can ignore these messages. DCPS cannot, unfortunately, differentiate between the printer being busy, offline, or otherwise unavailable.

2.4 Translators Do Not Generate Color PostScript

The translators provided with DCPS (for example, ReGIS) do not generate color PostScript commands, even if your source file contains color information. The colors are instead translated to various shades of gray.

2.5 Job Trailer Page Jogs with PostScript Level 2 Printers

When job jogging is enabled on PostScript Level 2 printers to separate jobs by offsetting them, jogging occurs between the body of a job and its trailer page (if any).

2.6 Unable to Perform ANSI Tray Selection for Certain Printers

An attempt to print an ANSI file containing a tray selection escape sequence might fail, depending on which printer you are using. If so, the job might abort with a PostScript configuration error, with the offending command being "setpapertray".

Also, some printers, such as the Compaq Laser Printer LN16 and GENICOM microLaser 170, have input trays with PostScript tray numbers of 0. The ANSI escape sequence DECASFC is used to select trays, but a value of 0 means "no tray change" and selecting tray 0 is therefore not possible. For example, an ANSI escape sequence of

        <CSI>0!v

does not select tray 0, but rather indicates no change of tray.

A workaround to this problem is to create and subsequently invoke a setup module that redefines the settoptray, setbottomtray, setlcittray and setmanualfeedtray PostScript commands within the TRN$XLATE_DICT dictionary.

For example, for a Compaq Laser Printer LN16, DIGITAL Laser Printer LN15 or LN15+, or GENICOM microLaser 170, you should create a setup module that contains the following definitions for settoptray, setbottomtray and setmanualfeedtray:

```
TRN$XLATE_DICT begin
 /settoptray        { statusdict begin 0 setpapertray end } def
 /setbottomtray     { statusdict begin 1 setpapertray end } def
 /setmanualfeedtray { statusdict begin 3 setpapertray end } def
end
```

For an HP LaserJet 4M Plus, you should create a setup module that contains:

```
TRN$XLATE_DICT begin
 /settoptray    { statusdict begin 3 setpapertray end } def
 /setbottomtray { statusdict begin 0 setpapertray end } def
 /setlcittray   { statusdict begin 1 setpapertray end } def
end
```

PostScript tray numbers are documented in the *DECprint Supervisor for OpenVMS User's Guide*.

2.7 AppleTalk Queues Do Not Start or Jobs Remain in Starting State

The first print queue in the process to use AppleTalk fails with the following error and the queue does not start:

```
%DCPS-W-ATK_FOR_VMS, Error connecting to AppleTalk for VMS driver
```

If other queues using the AppleTalk interconnect are started on that same process this error is not reported. These queues will start, but jobs on these queues remain in the "starting" state.

If a queue using the AppleTalk interconnect is started before the AppleTalk network software is running, then the queue might start but will not be functional. This occurs when DCPS is running as a multistreamed symbiont and another print queue is running in the same process.

To recover from such an error, stop all queues supported by any currently running symbiont processes that have detected that the AppleTalk network software is not running (one error message is generated per symbiont process). Restart the AppleTalk software and the queues.

To avoid this problem, run the AppleTalk network software before starting any DCPS print queues.

2.8 Some Printers Do Not Send Status Messages to the Host

Some PostScript printers, because of their internal architecture, report status information only to the printer console and not to the host system with which they are communicating. As a result, DCPS is not aware of some status conditions (for example, paper out, paper jam, page too complex, cover open, etc.) and cannot report them to you. Instead, the DCPS queue will enter the Stalled state if DCPS subsequently attempts to communicate with the printer. This subsequent attempt may come during the same job that first experienced the problem or in a later one.

The following is a list of some of the printers which exhibit this behavior:

- DEClaser 5100 printer
- LN17ps printer
- some HP LaserJet III and IV printers (but not the HP LaserJet III with the HP PostScript-Plus Level 2 cartridge or the HP LaserJet IIISi if jam recovery is disabled)

2.9 Printer Name Is Not Always Printed Correctly

When multinational characters are used in the PostScript "printername", the printer name printed on the bottom of separation pages may be printed in the wrong character set.

2.10 DDIF Printing Requires DECwindows Software or DECimage Application Services

To print DDIF encoded bitonal images, DCPS requires that either DECwindows software or Version 3.1 of DECimage Application Services (DAS) be installed on your system. DAS is only available on OpenVMS VAX systems.

2.11 Compatibility of NUMBER_UP and PostScript Drivers

PostScript files created with the LaserWriter 8.0 or 8.1.1 driver or the Adobe 2.1.1 Windows driver in conjunction with the application may produce PostScript files that do not print as expected with NUMBER_UP greater than 1.

Symptoms include pages being clipped, printed outside of the NUMBER_UP page spots, or being improperly scaled.

2.12 LIST Translator Ignores PAGE_SIZE Parameter

The LIST translator ignores the PAGE_SIZE parameter when formatting pages. It creates pages with maximum content at a size adequate for both A (Letter) and A4 paper:

PORTRAIT ORIENTATION: 80 columns, 70 lines
LANDSCAPE ORIENTATION: 150 columns, 66 lines

It is still possible to use PAGE_SIZE and SHEET_SIZE parameters together (with the DCPS-PLUS license) to scale the logical page onto a different size sheet.

2.13 Embedded PJL Commands Discarded; Avoid Binary Mode

Drivers that create files for PJL printers, such as those for the DEClaser 5100 and the HP LaserJet IV family, include printer control commands in HP Printer Job Language (PJL). DCPS filters out and discards that data. Therefore, printer options selected by such drivers do not affect the print job.

When using these drivers, do NOT select binary mode. It will insert additional commands into the file that can cause incorrect behavior when printing via DCPS. The exact form of behavior depends on which printer is actually connected to the queue and whether or not the job passes through a DCPS translator.

2.14 Unreliable Communication After Errors on Some Printers

Unexpected errors can occur at the end of a print job when printing to some printers using the AppleTalk interconnect. The printers which can exhibit problems include the LaserWriter Pro 600, LaserWriter Pro 630, the LaserWriter IIg, and the LaserWriter IIf. Generally, the unexpected error occurs when an explainable error occurred during the print job; for example, a PostScript error which causes the PostScript interpreter to "Flush to the EOJ", or a timeout error while waiting for manual feed. The behavior a user may see includes one of more of the following:

- A second PostScript error or timeout error occurs

- DCPS unexpectedly loses communication with the printer
- The job trailer page (if specified) may not print
- The page count in the accounting file is not correct
- A delay of up to one minute before the job completes.

The user's part of the print job prints as expected. The unexpected error occurs during the end of job processing (for example, getting the page count or the job trailer page printed) done by the DECprint Supervisor. Once the offending job is complete, subsequent jobs print as expected. No system operator intervention is needed.

2.15 Deleting Job When Using AppleTalk

When printing using an AppleTalk interconnect, a request to delete a job (DELETE/ENTRY) is accomplished by closing the connection to the printer. The AppleTalk protocol does not provide for interrupting the PostScript interpreter; therefore, the printer will continue to print page descriptions that are contained in its buffer before it stops printing the job. A job trailer page will not be printed.

2.16 Avoid STOP/QUEUE/RESET Usage for PrintServer Printer Which Is Rejecting Connections

If you issue a STOP/QUEUE/RESET command for a queue to a DIGITAL PrintServer printer while there is a job in the "Starting" state and while the printer is rejecting connections (because, for example, the PrintServer is powered off or is booting), the queue will stop. Occasionally the symbiont process will not terminate. Avoid issuing this command until the PrintServer printer becomes available. If the job is in the "Starting" state and also in the PrintServer printer's job queue, a STOP/QUEUE/RESET will execute correctly.

2.17 No Job Trailer Page on DELETE/ENTRY

If you issue a DELETE/ENTRY command when the printer is printing the job trailer page, it is possible to delete the printing of this page. Also, if you issue a DELETE/ENTRY command for a job printing on a PrintServer printer after all the data for the file is sent, it is possible that the job trailer page will not print.

2.18 Problems with PostScript Files When Printing with /COPIES

When you use the /COPIES qualifier with a PostScript file, DCPS surrounds each file with a PostScript "save" and "restore" to avoid exhausting virtual memory in the printer.

However, there are infrequent cases when the print job aborts with an invalid restore error message. If this occurs, use the /JOB_COUNT qualifier instead of /COPIES.

2.19 Problems Using PAGE_LIMIT with /JOB_COUNT

If you use the PAGE_LIMIT parameter with the /JOB_COUNT qualifier, you are apt to get undesired results. In particular, if your intent is to suppress some initial pages of your job, DCPS will suppress them for the first copy of the job but print all pages of subsequent job copies. If your intent is to suppress some of the

trailing pages of your job, DCPS will suppress them for the first copy of the job and omit subsequent job copies.

If you want multiple copies of your job with some pages suppressed, issue the PRINT command the desired number of times rather than using the /JOB_COUNT qualifier.

2.20 Printers with Auto-Sensing Features

Many printers can sense the data type of a print job. Such printers allow you to specify how and whether the auto-sensing feature is enabled, per interconnect channel, through the front panel.

For most printers that offer this feature, the DECprint Supervisor software works properly when the printer is set to "PostScript" mode, or to "Automatic" mode. You must set such printers to operate in one of these modes before starting the DCPS queues. The DCPS software does not operate properly if the printer is set to "PCL" mode.

See Chapter 4 and the *DECprint Supervisor for OpenVMS System Manager's Guide* for additional information.

2.21 Setting I/O Buffers Too Small May Produce OPCOM Errors

If the size of the I/O buffers, set by the SYSGEN parameter MAXBUF, is too small, the print queue will be stopped, and the following message will be displayed to OPCOM:

```
%SYSTEM-E-EXQUOTA, process quota exceeded
```

If this error occurs, increase the value of the SYSGEN parameter MAXBUF.

2.22 Cannot Start Queue for PrintServer Printer

Because of a CPAP protocol bug in some versions of DIGITAL PrintServer Software, DCPS symbionts can be given a badly formatted packet in response to a resource query. The bad packet prevents a symbiont from starting.

The problem is triggered by loading enough resources to require more than one packet describing the resources loaded to be returned. The suggested workaround is to load fewer resources. Empirical testing has found the limit to be 7 fonts.

This problem is fixed in version S5.0-29 and later of the PrintServer Software.

3

Other Restrictions that Affect DCPS

This section contains information about other problems that are known to impact DECprint Supervisor and remedial patch kits ("ECOs") that address some of these problems.

You can obtain these remedial patch kits (or an update to them)

- From a Compaq Customer Support Center

- Using FTP, starting with path `ftp.support.compaq.com/public/vms/`

- Using the World Wide Web, starting at `http://www.support.compaq.com/patches/`

- Using a Compaq support tool such as DSNlink

3.1 DCPS Processes Consume Memory and Pagefile

Over time, DCPS print symbiont processes may consume increasing amounts of memory and pagefile space, resulting in system performance problems. This problem is seen only on OpenVMS Alpha V7.1-2 systems.

The following DECthreads patch kit fixes this problem:

- VMS712_PTHREADS-V0300, for OpenVMS Alpha V7.1-2 systems

3.2 Problems Starting Queues with Multistreamed Symbionts

All sites running DECprint Supervisor as a multistreamed process on OpenVMS V7.1 and earlier should install the Queue Manager Remedial Update.

The Queue Manager remedial update kits are:

- ALPQMAN02_071, for OpenVMS Alpha V7.1 systems

- ALPQMAN05_070, for OpenVMS Alpha V7.0 systems

- ALPQMAN03_062, for OpenVMS Alpha V6.2 systems

- ALPQMAN04_061, for OpenVMS Alpha V6.1 systems

- VAXQMAN02_071, for OpenVMS VAX V7.1 systems

- VAXQMAN04_070, for OpenVMS VAX V7.0 systems

- VAXQMAN05_062, for OpenVMS VAX V6.2 systems

- VAXQMAN03_070, for OpenVMS VAX V5.5-2 through V6.1 systems

This update corrects problems that cause the START/QUEUE command to hang under certain circumstances when operating with a multistreamed symbiont. The release notes provided with the kit describe all the problems fixed by this update. After installing this update, you need to reboot your system to enable these changes.

If this update is not installed you may encounter the following problem. If a queue running in a multistreamed process is stopped with STOP/QUEUE/RESET, then quickly started with START/QUEUE, it is possible that the start request will hang. In addition, sometimes the following message will be written to OPCOM:

```
%DCPS-F-STREAMUSE, Request 4 for Stream Id x ignored.
Not consistent with symbiont state
```

To recover, issue a Ctrl/Y to return to the DCL prompt, then issue a STOP/QUEUE/RESET again, wait a few seconds, and try to start the queue again. To avoid this problem, install the queue manager update.

3.3 Problem Starting Queues for LAT- and Direct-Connected Printers

There is an OpenVMS V7.0 terminal driver problem that may hinder you in using DCPS with LAT- and direct-connected printers. The symptom is that the associated queue cannot be started, with messages like the following being written to OPCOM:

```
%%%%%%%%%  OPCOM  31-OCT-1995 21:53:55.73  %%%%%%%%%%
Message from user SYSTEM on FUNYET
Queue SYS$PRINT: %DCPS-E-UNSUPPORTED, unsupported operation or
function

%%%%%%%%%  OPCOM  31-OCT-1995 21:53:55.74  %%%%%%%%%%
Message from user QUEUE_MANAGE on FUNYET
%QMAN-I-QUENOTSTART, queue SYS$PRINT could not be started on node
FUNYET

%%%%%%%%%  OPCOM  31-OCT-1995 21:53:55.74  %%%%%%%%%%
Message from user QUEUE_MANAGE on FUNYET
-SYSTEM-F-ABORT, abort
```

The failure may be constant or intermittent. If you subsequently attempt to start the queue, you may succeed.

The following patch kits fix this problem:

- ALPTTDR01_070, for OpenVMS Alpha V7.0 systems
- VAXTTDR01_070, for OpenVMS VAX V7.0 systems

3.4 I/O Errors for Serially-Connected Printers

There is an OpenVMS terminal driver problem that may result in your printer reporting I/O problems when connected to a serial port of your OpenVMS system. You may see the problem with OpenVMS Alpha V6.2 through V7.0, and with OpenVMS VAX V5.5 through V7.0, depending in part on what kind of serial port you are using.

The problem is that the terminal driver sometimes does not respond quickly enough to an XOFF request from the printer to prevent the printer from losing data.

This problem is fixed in OpenVMS Alpha V7.1.

The following patch kits fix this problem:

- ALPOPDR02_070, for OpenVMS Alpha V7.0 systems
- ALPOPDR04_062, for OpenVMS Alpha V6.2 systems

3.5 Symbiont Aborts with Insufficient Dynamic Memory Error

There is a DECthreads problem on OpenVMS VAX V7.0 and V7.1 systems that results in the DCPS symbiont aborting with an INSFMEM error. The DCPS symbiont consumes an increasing amount of memory over time, eventually aborting when it attempts to obtain more than the available dynamic memory. The probability of the symbiont aborting increases with each new print job that it processes.

The following patch kits fix this problem:

- VAXCMAR01_071, for OpenVMS VAX V7.1 systems
- VAXCMAR01_070, for OpenVMS VAX V7.0 systems

3.6 Symbionts Aborts with Access Violation or Bad Parameter Error

The DCPS symbiont can abort with an ACCVIO or BADPARAM error, possibly also indicating the CMA (DECthreads) facility, beginning 19 May 1997. Other software on your system, including DIGITAL TCP/IP Services for OpenVMS and anything layered upon DECthreads, may also fail after this date.

The problem is related to a long-standing OpenVMS restriction of fewer than 10,000 days in a delta-time value. POSIX-related software in particular, using the UNIX reference date of 1 January 1970, can encounter this limit on and after 19 May 1997. Refer to the OpenVMS web pages (`http://www.openvms.compaq.com`) for more information about the "Delta-Time Limit".

The following patch kits fix this problem:

- ALPLIBR07_070, for OpenVMS Alpha V6.1 to V7.0 systems
- VAXLIBR06_070, for OpenVMS VAX V5.5 to V7.0 systems

4

Printer-Specific Information

The following sections provide information about using DCPS with specific printers. The *DECprint Supervisor for OpenVMS System Manager's Guide* and *DECprint Supervisor for OpenVMS User's Guide* contain additional printer-specific information.

4.1 HP LaserJet 2100

4.1.1 Media Size Not Selectable

The HP LaserJet 2100 printer cannot detect the size of paper in its trays. Therefore, the following restrictions apply when using DCPS with this printer:

- It is not possible to select media by paper size.

- If paper of a different size than the default is loaded in a tray, its size will be considered as the default size. For example, if the default printer paper size is letter, a legal-size document will be truncated to letter size when printing on legal size paper.

To avoid printing on the wrong size paper, set the tray with the default paper size "unlocked" and set all other trays "locked".

4.2 HP LaserJet 4050

4.2.1 Minimum Firmware Version

To use an HP LaserJet 4050 printer, it is recommended that the printer be running a minimum firmware version of **19991030 MB6.30**. Earlier versions of firmware may cause problems such as misprinted or missing characters when using the DCPS ANSI translator, especially when printing jobs with landscape orientation or NUMBER_UP. This firmware version number is displayed as *Firmware Datecode* on the printer's configuration page.

If your printer is running an older version of firmware, contact HP and request the proper version. The new firmware will be sent on a SIMM to be installed in your printer.

4.3 HP LaserJet 8100 and 8150

4.3.1 Optional Mailbox

DCPS numbers the optional mailbox bins on the HP LaserJet 8000 printer from 1-5, 1-7 or 1-8, depending on the particular option installed. This is consistent with the numbers molded into the plastic beside the bins. The printer's console, in contrast, refers to these same bins as numbers two through nine. Refer to the *HP LaserJet User Guide* for your printer model for more information about the numbering and purpose of trays with different options and configurations.

4.3.2 Problems Starting Queues

Some models in this series may not allow DCPS jobs to start. To resolve this, either set the printer to PostScript mode or suppress DCPS's PostScript synchronization. See Section 15.2.11 in these Release Notes or the *DECprint Supervisor for OpenVMS System Manager's Guide* for more information.

4.4 Lexmark Optra S and T Series

4.4.1 Problems Starting Queues

Some models in the Lexmark Optra S and Optra T series may not allow DCPS jobs to start. To resolve this, either set the printer to PostScript mode or suppress DCPS's PostScript synchronization. See Section 15.2.11 in these Release Notes or the *DECprint Supervisor for OpenVMS System Manager's Guide* for more information.

4.5 Tektronix Phaser

4.5.1 Printer Configuration Settings

You must change the following AppSocket settings when using Phaser printers with DCPS:

Table 4–1 Tektronix Phaser Configuration Settings

AppSocket Setting	Value
Interpreter	PostScript
Filtering	Interpreter-Based

5

DCPS Version 1.8 Information

This section describes changes included in DCPS V1.8. You can find more information for several of these changes elsewhere in these release notes.

5.1 DCPS Version 1.8 Changes

5.1.1 New Printer Support

DCPS V1.8 adds support for the following printers:

> GENICOM LN21
> GENICOM LN28
> GENICOM LNM40
> GENICOM microLaser 170
> GENICOM microLaser 210
> GENICOM microLaser 280
> GENICOM microLaser 320
> GENICOM microLaser 401
> HP LaserJet 8000
> Lexmark Optra S 1625
> Lexmark Optra S 1855
> Tektronix Phaser 780

You can find more information in Chapter 4 of these release notes.

5.1.2 Some DCPS Stapling Restrictions Removed

DCPS supports the stapling option on the LN32, LNM40, mL320 and mL401 printers.

In DCPS V1.7-1, you could not automatically staple jobs containing more than one file. Starting with DCPS V1.8, jobs with multiple files will be automatically stapled if requested.

In DCPS V1.7-1, you could not automatically staple PCL jobs. Starting with DCPS V1.8, PCL files will be automatically stapled if requested. If stapling is requested, PCL files will be translated to PostScript using the DCPS PCL4 translator, rather than being interpreted by the printer's native PCL interpreter. If your PCL file contains any PCL escape sequences introduced after PCL4, the sequences will be ignored.

Refer to *DECprint Supervisor for OpenVMS User's Guide* for information about using the stapling option from DCPS.

5.2 DCPS Version 1.8 Fixes

The following problems are fixed in DCPS V1.8.

5.2.1 Symbiont Aborts When IP Names Are Used

When using DCPS V1.7-1 or earlier with DIGITAL TCP/IP Services for OpenVMS, V5.0, on Alpha systems, the DCPS print symbiont could abort when the TCP/IP host name for a printer was resolved to an address by a DNS server. This problem did not occur with TCP/IP Services V5.0 on VAX systems, or with TCP/IP Services V4.2 or earlier. This problem has also been resolved in Compaq TCP/IP Services for OpenVMS, V5.1.

OPCOM messages similar to the following were displayed:

```
%%%%%%%%%%  OPCOM   3-MAR-1999 15:38:25.08  %%%%%%%%%%
Message from user SYSTEM on FUNYET
Process SYMBIONT_407: %SYSTEM-F-STKOVF, stack overflow, PC=00000000003237A4, PS=0000001B

%%%%%%%%%%  OPCOM   3-MAR-1999 15:38:25.14  %%%%%%%%%%
Message from user SYSTEM on FUNYET
%QMAN-E-SYMDEL, unexpected symbiont process termination

%%%%%%%%%%  OPCOM   3-MAR-1999 15:38:25.17  %%%%%%%%%%
Message from user SYSTEM on FUNYET
-SYSTEM-F-STKOVF, stack overflow, PC=0000000000000000, PS=00000000

%SYSTEM-F-STKOVF, stack overflow, PC=0000000000032F1C, PS=0000001B

  Improperly handled condition, image exit forced.
    Signal arguments:   Number = 0000000000000003
                        Name   = 0000000000000554
                                 0000000000032F1C
                                 100000000000001B

    Register dump:
    R0  = 0000000000000000  R1  = 0000000000000554  R2  = 0000000000010220
    R3  = 0000000000020018  R4  = 0000000000000000  R5  = 0000000000011588
    R6  = 0000000000000000  R7  = 000000000000000B  R8  = 000000007AF2EFD8
    R9  = 0000000000FB132C  R10 = 000000007AF2F169  R11 = 000000007AF2F5E0
    R12 = 00000000000230D8  R13 = 000000007B022330  R14 = FFFFFFFF8101A7C0
    R15 = 0000000000000554  R16 = 0000000000000554  R17 = 0000000000000000
    R18 = 000000000000000C  R19 = 0000000000000001  R20 = FFFFFFFF83BB0000
    R21 = FFFFFFFFDFF7FE000  R22 = FFFFFFFF800D5160  R23 = 000000007FFA1FC0
    R24 = 000000007AF2EFD8  R25 = 0000000000000001  R26 = 0000000000032F1C
    R27 = 000000007B562E00  R28 = 100000000000001B  R29 = 000000007AF2EFA0
    SP  = 000000007AF2EF90  PC  = 0000000000032F1C  PS  = 100000000000001B
```

5.2.2 Delays and Errors with Raw TCP/IP Print Jobs

With some printers, including the LN32, LNM40, mL320 and mL401, DCPS sometimes paused for five to ten seconds between jobs when using a raw TCP/IP connection. The following error message would often appear before the delay:

```
%DCPS-W-NOT_READY, Printer is not ready
```

With some printers, including the LN20, LN40 and LNC02, DCPS would return the message:

```
%DCPS-W-OFFLINE, Print Engine has gone off line
```

when starting a job if the printer was in Energy Saving mode.

5.2.3 ANSI GSS Sequence Could Cause Symbiont Crash

When using the ANSI GSS escape sequence with a parameter of zero, the ANSI translator would crash and cause the print queue to stop. For example, the sequence:

```
<CSI><SP>C
```

would cause DCPS to crash with the following error messages:

```
%%%%%%%%%%  OPCOM   3-DEC-1999 11:48:09.85  %%%%%%%%%%
Message from user SYSTEM on RT495
Process SYMBIONT_49: %SYSTEM-F-INTDIV, arithmetic trap, integer divide by zero
at PC=FFFFFFFF808A0AE8, PS=0000001B

%%%%%%%%%%  OPCOM   3-DEC-1999 11:48:09.89  %%%%%%%%%%
Message from user QUEUE_MANAGE on RT495
%QMAN-E-SYMDEL, unexpected symbiont process termination

%%%%%%%%%%  OPCOM   3-DEC-1999 11:48:09.89  %%%%%%%%%%
Message from user QUEUE_MANAGE on RT495
-SYSTEM-F-INTDIV, arithmetic trap, integer divide by zero at
PC=0000000000000000, PS=00000000
```

5.2.4 Incorrectly Coded Font Causes Font Listings to Fail

When requesting a list of fonts from some printers, including the LN32 and LNM40, the list would either not print or fail with a PostScript error. This would occur if a DCPS ANSI print job had been printed on the printer since the last time it was powered on. ANSI fonts created by DCPS have been fixed so that such font lists, including those produced using the printer's console and user-written PostScript programs that inquire about font information, now succeed.

5.2.5 Layup Usage and Printer Errors Can Cause Memory Leaks

DCPS symbiont processes would sometimes use increasing amounts of memory over time when you used layup files. This also occurred rarely for certain printer error messages.

Also see Chapter 3 for information about a memory leak in OpenVMS Alpha V7.1-2.

6

DCPS Version 1.7-1 Information

This section describes changes included in DCPS V1.7-1. You can find more information for several of these changes elsewhere in these release notes.

6.1 DCPS Version 1.7-1 Changes

6.1.1 New Printer Support

DCPS V1.7-1 adds support for the following printers:

Compaq Laser Printer LNC02
Compaq Laser Printer LNM40

The Compaq Laser Printer LNC02 is equivalent to the DIGITAL Laser Printer LNC02. References in the DCPS documentation to the DIGITAL Laser Printer LNC02 also apply to the Compaq Laser Printer LNC02.

You can find more information in Chapter 4 of these release notes.

6.1.2 Support for Stapling on LN32 and LNM40

DCPS V1.7-1 adds support for the optional stapling feature of the Compaq Laser Printer LN32 and LNM40. Refer to *DECprint Supervisor for OpenVMS User's Guide* for information about using the stapling option from DCPS.

6.1.3 Support for Process Software TCPware for OpenVMS Software

DCPS now supports your use of TCPware from Process Software in addition to DIGITAL TCP/IP Services and Process Software MultiNet software to provide IP connectivity. TCPware V5.3 or later is supported.

6.2 DCPS Version 1.7-1 Fixes

The following problems are fixed in DCPS V1.7-1.

6.2.1 Selecting LN32 Mailbox Causes Error

When the Compaq Laser Printer LN32 was set to jog (offset) output, selecting a mailbox as an output tray caused the print job to fail with the error:

```
%DCPS-E-OUTTRAYNOTAVL, No MAILBOX_n tray is installed on printer_name
```

where *n* is the number of the mailbox tray selected and *printer_name* is the name of the printer.

DCPS jobs can now be sent to any mailbox regardless of the printer's JOB OFFSET setting.

6.2.2 Selecting Paper Size FOLIO Causes Error

Starting with DCPS V1.6, selecting paper size FOLIO would result in the job failing with one of the following error messages:

```
%DCPS-E-PARSYNERR, Syntax error in the /PARAMETERS qualifier at or near PAGE_SIZE=FOLIO
%DCPS-E-PARSYNERR, Syntax error in the /PARAMETERS qualifier at or near SHEET_SIZE=FOLIO
```

7

DCPS Version 1.7 Information

This section describes changes included in DCPS V1.7. You can find more information for several of these changes elsewhere in these release notes.

7.1 DCPS Version 1.7 Changes

7.1.1 OpenVMS V7.2 and Extended File Specifications Supported

Systems running OpenVMS Alpha or VAX V7.2 are supported by DCPS. DCPS V1.7 provides default support for systems with Extended File Specifications, including ODS-5 volumes and deep directories.

Any file in any directory on an ODS-5 volume can be printed. The file name may be truncated on file separator pages and in the heading when printing with the LIST translator. If the file name is truncated, it is so indicated with an ellipsis (...).

7.1.2 New Printer Support

DCPS V1.7 adds support for the following printers:

    Compaq Laser Printer LN32
    HP LaserJet 4000
    HP LaserJet 5000
    Lexmark Optra S 1620
    Lexmark Optra S 2420

You can find more information in Chapter 4 of these release notes.

7.1.3 TCP/IP Jobs Terminate with BADPARAMS Error

Under certain conditions, jobs printed over TCP/IP would terminate, the queue would stop and a message similar to the following would be sent to OPCOM:

```
%%%%%%%%%%  OPCOM  25-FEB-1998 17:09:53.38  %%%%%%%%%%
Message from user SYSTEM on HUMANE
Queue LN32_LAB: %DCPS-F-BADPARAM, bad parameter value
```

Changes to eliminate this problem under some conditions were made in DCPS V1.6-1. Additional changes have been made in DCPS V1.7 to eliminate this problem when DCPS is establishing a network connection to a printer.

8
DCPS Version 1.6-1 Information

This section describes changes included in DCPS V1.6-1. You can find more information for several of these changes elsewhere in these release notes.

8.1 DCPS Version 1.6-1 Changes

8.1.1 ISO Latin-9 Character Set Added to ANSI Translator

Support for the ISO Latin-9 (ISO 8859-15) character set has been added to the DCPS ANSI translator. This character set includes the Euro symbol.

One way to print the Euro symbol is to include the following ANSI escape sequences in your ANSI file:

```
<ESC>.b        selects ISO Latin-9 character set
<ESC>n$        prints Euro symbol
```

In order to add the ISO Latin-9 character set, the DCPS ANSI translator has been updated. If you are upgrading to DCPS V1.6-1 or later from a previous version and want to print characters from the ISO Latin-9 character set, you must power cycle your printer(s) after upgrading DCPS. This needs to be done only once.

8.1.2 New Printer Support

DCPS V1.6-1 adds support for the Compaq Laser Printer LN16.

You can find more information in Chapter 4 of these release notes.

8.2 DCPS Version 1.6-1 Fixes

The following problems are fixed in DCPS V1.6-1.

8.2.1 TCP/IP Jobs Terminate with BADPARAMS Error

Under certain conditions, especially on a busy or slow network, jobs printed over TCP/IP would terminate, the queue would stop and a message similar to the following would be sent to OPCOM:

```
%%%%%%%%%%  OPCOM  25-FEB-1998 17:09:53.38  %%%%%%%%%%
Message from user SYSTEM on HUMANE
Queue LN32_LAB: %DCPS-F-BADPARAM, bad parameter value
```

8.2.2 Printing VFC Files Causes Access Violation

Starting with DCPS V1.6, printing a VFC file sometimes caused the DCPS print symbiont to fail with an OPCOM message similar to the following:

```
%%%%%%%%%%  OPCOM   7-JAN-1999 14:47:04.60  %%%%%%%%%%
Message from user SYSTEM on FUNYET
Process SYMBIONT_90: Message number 0800800C
Message number 20000000
-TSU
-NONAME
-TSU

%%%%%%%%%%  OPCOM   7-JAN-1999 14:47:05.46  %%%%%%%%%%
Message from user QUEUE_MANAGE on FUNYET
%QMAN-E-SYMDEL, unexpected symbiont process termination

%%%%%%%%%%  OPCOM   7-JAN-1999 14:47:05.47  %%%%%%%%%%
Message from user QUEUE_MANAGE on FUNYET
-NONAME-F-NOMSG, Message number 0800800C
```

9

DCPS Version 1.6 Information

This section describes changes included in DCPS V1.6. You can find more information for several of these changes elsewhere in these release notes.

9.1 DCPS Version 1.6 Changes

9.1.1 OpenVMS VAX V5.5-2 and V6.0 Systems Supported

DECprint Supervisor for OpenVMS is now supported on systems running OpenVMS VAX V5.5-2 or later. DCPS V1.4 and V1.5 require a minimum operating system version for VAX systems of OpenVMS VAX V6.1.

The DEC C/C++ Run-Time Components kit must be installed before installing DCPS on an OpenVMS VAX V5.5-2 or V6.0 system. See the *DECprint Supervisor for OpenVMS Software Installation Guide* for more information.

9.1.2 New Printer Support

DCPS V1.6 adds support for the following printers:

> DIGITAL Laser Printer LNC02
> DIGITAL Laser Printer LN15+

You can find more information in Chapter 4 of these release notes.

9.1.3 New Paper Sizes

DCPS supports several new paper sizes, as listed in the table below. You can specify these sizes as the logical PAGE_SIZE value for any printer, and as the physical SHEET_SIZE value for the LNC02 printer.

Size Name	Size (mm)	Size (inches)
FOOLSCAP	203 x 330	8.0 x 13.0
SPFOLIO	216 x 315	8.5 x 12.4
UKQUARTO	203 x 254	8.0 x 10.0

9.2 DCPS Version 1.6 Fixes

The following problems are fixed in DCPS V1.6.

9.2.1 Every Page Is Offset on LN40

If the Offset Stacking feature of the DIGITAL Laser Printer LN40 was enabled from the printer's console, DCPS jobs would print with each page offset from the previous page. This problem is fixed, with the following restrictions:

- If a SHEET_COUNT parameter value greater than 1 is specified, job and file separator pages are printed offset from the user job. In addition, the copies of each page of your job are offset from the copies of the previous page.

- If your document was produced on a PC or contains PostScript commands specifying the number of copies to print, you may not get the desired jogging or copy behavior that you expect. For example, you may only get a single copy of your document, you may get collated copies that are offset from each other, or the job's trailer page (if any) may be printed after the first copy of your document.

  To avoid these restrictions, use the /COPIES or /JOB_COUNT qualifiers with your PRINT command rather than the SHEET_COUNT parameter. Also, do not specify a copy count other than 1 when producing a document on a PC.

- If the printer's Collation setting is off, the first DCPS job printed after the LN40 has been powered on will print with each page offset from the previous page. There is no workaround for this problem.

9.2.2 VFC Files Consume Excessive CPU Time

Starting with DCPS V1.1, printing VFC-formatted files consumed significantly more CPU time than printing similar non-VFC files. VFC printing performance has been improved so that printing VFC files uses approximately the same amount of time as printing non-VFC files.

9.2.3 Layup Files Installed in Incorrect Directory

When installing DCPS on a system on which DCPS was not running, you were asked where to put DCPS layup files. If you chose a location other than the default, DCPS would define the layup logical name DCPS$LAYUP to this alternate location, but the layup files would be moved to the default location. DCPS now validates the location you specify and installs the layup files in that location.

9.2.4 LN20 13x19 Paper Tray Not Selectable

When printing to 13x19 (Universal) paper on the DIGITAL Laser Printer LN20, specifying the INPUT_TRAY parameter would cause the job to fail. Specifying the PAPER_SIZE parameter without also specifying INPUT_TRAY would print correctly.

For example, the following command:

```
$ PRINT /PARAMETERS=INPUT_TRAY=MULTIPURPOSE MY-RESUME.PS
```

would return the error message:

```
%DCPS-F-UNKPAPSIZE, Unknown papersize in selected tray, cannot print job
-DCPS-I-JOB_ID, for job MY-RESUME (queue SYS$PRINT, entry 27) on LN20
```

and the following command:

```
$ PRINT /PARAMETERS=(INPUT_TRAY=MULTIPURPOSE,PAGE_SIZE=13X19) MY-RESUME.PS
```

would return the error message:

```
%DCPS-E-SIZNOTRAY, 13x19 size medium is not in the multipurpose tray in LN20.
-DCPS-I-JOB_ID, for job MY-RESUME (queue SYS$PRINT, entry 29) on LN20
%DCPS-E-FLUSHING, Rest of Job (to EOJ) will be ignored
```

9.2.5 Symbiont Aborts with Internal Error

Under some conditions, especially when the user deleted a currently printing job, the DCPS symbiont would fail. The resulting OPCOM message would be similar to the following:

```
%%%%%%%%%%  OPCOM  22-JAN-1997 15:02:28.11  %%%%%%%%%%
Message from user SYSTEM on ZIPPY
Process SYMBIONT_21: %DCPS-F-INTERNAL_ERROR, Internal error detected
at line 427 of file DCPS$:[BUILD.V13]DP_STMGT.C;1,
Invalid state change, cannot continue
```

10

DCPS Version 1.5-2 Information

10.1 DCPS Version 1.5-2 Fixes

This section lists problems that have been corrected in DCPS V1.5-2.

10.1.1 No Job Is Printed if Output Tray Is Specified

If you specified the OUTPUT_TRAY parameter with DCPS V1.5-1, DCPS would not produce any printed output for your job. If you also specified the NOTIFY qualifier, you would see error messages similar to the following on your screen:

```
Job MY-FILE (queue MY_QUEUE, entry 330) started on MY_QUEUE
$
%DCPS-I-JOBSTART, Job MY-FILE (queue SYS$PRINT, entry 330) started on MY_QUEUE
$

%DCPS-W-UNDEF, undefined: Name not known - offending command is $
-DCPS-I-JOB_ID, for job MY-FILE (queue SYS$PRINT, entry 330) on MY_QUEUE
$

%DCPS-E-FLUSHING, Rest of Job (to EOJ) will be ignored
-DCPS-I-JOB_ID, for job MY-FILE (queue SYS$PRINT, entry 330) on MY_QUEUE
$

%DCPS-W-UNDEF, undefined: Name not known - offending command is $
-DCPS-I-JOB_ID, for job MY-FILE (queue SYS$PRINT, entry 330) on MY_QUEUE
$

%DCPS-E-FLUSHING, Rest of Job (to EOJ) will be ignored
-DCPS-I-JOB_ID, for job MY-FILE (queue SYS$PRINT, entry 330) on MY_QUEUE
$

Job MY-FILE (queue MY_QUEUE, entry 330) terminated with error status
%SYSTEM-F-ABORT, abort
```

11

DCPS Version 1.5-1 Information

11.1 DCPS Version 1.5-1 Highlights

DECprint Supervisor Version 1.5-1 adds support for the DIGITAL Laser Printer LN20.

You can find more information about this printer in Chapter 4 of these release notes.

11.2 DCPS Version 1.5-1 Fixes

This section lists problems that have been corrected in DCPS V1.5-1.

11.2.1 Colorwriter LSR 2000 Jobs Remain in Starting State

When attempting to print to the Colorwriter LSR 2000 printer with DCPS V1.5, the job would remain in a starting state and never print.

11.2.2 CONFIDENTIAL Does Not Appear When Using LAYUP or NUMBER_UP

If you specified the LAYUP or NUMBER_UP parameter when printing the DCPS example file CONFIDENTIAL.PS with DCPS V1.4 or later, the word "CONFIDENTIAL" would not appear on the output.

11.3 DCPS Version 1.5-1 Changes

This section describes changes made in DCPS V1.5-1.

11.3.1 New Paper Sizes

DCPS now supports the 12x19.5 inch (864x1404 mm) and 13x19 inch (936x1368 mm) paper sizes. You can specify 12X19.5 or 13X19 as the logical PAGE_SIZE value for any printer, and as the physical SHEET_SIZE value for the LN20 printer. Note that the LN20 console and documentation refer to the 12x19.5 and 13x19 paper sizes as 12x19 and Universal respectively.

12

DCPS Version 1.5 Information

12.1 DCPS Version 1.5 Highlights

DECprint Supervisor Version 1.5 adds support for the following printers:

DIGITAL Laser Printer LN15
DIGITAL Laser Printer LN17+ps
DIGITAL Laser Printer LN40

You can find more information about these printers in Chapter 4 of these release notes.

12.2 DCPS Version 1.5 Fixes

This section lists problems that have been corrected in DCPS V1.5.

12.2.1 Printing ANSI Document with User-Defined Fonts Fails

When printing an ANSI document that contains a user-defined font, the print job would sometimes fail. This problem has been corrected in DCPS V1.5.

12.3 DCPS Version 1.5 Changes

This section describes changes made in DCPS V1.5.

12.3.1 Sending ANSI Documents Using the DEClaser 3500 Fax Option

You can now fax ANSI documents using the DEClaser 3500 fax option, in addition to previously supported PostScript and text files. Documents consisting only of lines of printable ASCII characters can be sent as a text file following the instructions in SYS$COMMON:[SYSHLP.EXAMPLES.DCPS]FAX_3500_ PRINTME.PS, or as an ANSI document as described in the *DECprint Supervisor for OpenVMS User's Guide*.

12.3.2 Cisco MultiNet Is Now Process Software MultiNet

The TCP/IP software product MultiNet has been sold by Cisco Systems, Incorporated to Process Software Corporation. References to Cisco MultiNet will be changed to Process Software MultiNet as DCPS documentation is revised.

13

DCPS Version 1.4 Information

13.1 DCPS Version 1.4 Highlights

The following list provides a brief description of the significant changes included in DECprint Supervisor Version 1.4. You can find more information for several of these changes elsewhere in these release notes.

- Communication with printers via Raw TCP/IP Sockets

- Support for the following printers:

    HP LaserJet 4MV
    HP LaserJet 5M (monochrome version)
    HP LaserJet 5SiMX
    Lexmark Optra Rt+

- Automatic stopping and restarting of active DCPS queues during installation

- Support for Process Software MultiNet for OpenVMS Software for IP connectivity

- Revised hardcopy documentation

- A minimum supported OpenVMS version of 6.1

13.2 DCPS Version 1.4 Fixes

This section lists problems that have been corrected in DCPS V1.4.

13.2.1 Only One Bin Gets a Separator Page if Collating Without OUTPUT_TRAY

If the default output tray for the LN17ps was set to the collator and a SHEET_COUNT=n parameter for the print job was specified without also specifying the OUTPUT_TRAY=xxx parameter, only one copy of any separator page (job burst, flag, or trailer page) would be generated. Further, such pages would be delivered to random bins.

13.2.2 LN17ps Printer Hangs in Processing State

When the LN17ps collator was specified as the default output tray and the input tray was MANUAL_FEED, the printer would hang when the specified SHEET_COUNT was greater than one.

This error occurred most often while printing trailer pages.

On some occasions, a blank data sheet was sent to the collator just prior to the printer hanging.

This problem is attributed to both a bug in the LN17ps printer and in DCPS V1.3. With the DCPS V1.4 fix, you are unlikely to see this problem.

13.2.3 Output May Be Clipped on the LN17ps

Printer output on the LN17ps might have been clipped when the following conditions were met:

- you specified an INPUT_TRAY value of FRONT or MULTIPURPOSE

- you specified a sheet size

- the imageable area of the requested sheet size was larger than the console-specified size for the manual tray

To avoid such clipping, use INPUT_TRAY=MANUAL_FEED.

When you specify an INPUT_TRAY value of FRONT or MULTIPURPOSE for the LN17ps along with a sheet size, DCPS V1.4 now requires you to specify the sheet size that matches the console-specified manual size.

13.2.4 Erroneous TRAYSUBST Messages

Erroneous DCPS-I-TRAYSUBST messages may have occurred for specific output trays for the following printers:

Printer	Output Tray	Substitution Reported
LN17ps	Top	OCT
LN17ps	Upper	OCT
LPS17	LCOS	2
LPS32	LCOS	4
LPS40	LCOS	4

The correct tray was selected even though the erroneous TRAYSUBST message was issued.

13.2.5 Required Device Control Module Not Found for PrintServer Printers

If the first job submitted to a DIGITAL PrintServer printer contained an invalid parameter, a "Required device control module LPS$$INITPSDEVICE not found" error message was issued and the print queue stopped. This error occurred **only** if the first job printed contained an invalid parameter.

This error did not occur with desktop printers.

13.2.6 Erroneous Connection Termination Error for DEClaser 5100

DCPS was unable to communicate with the DEClaser 5100 via the NIC card, and would instead consistently fail with CONTERMINATED errors.

This problem was erroneously believed to have been fixed in DCPS V1.3, as reported in Section 14.2.2.

13.2.7 PrintServer Printer Hangs When Network Connection Is Lost and Jobs Are Pending

A DCPS print queue could hang when all the following conditions were true:

- A DCPS print job was pending (that is, not the current job) on the DIGITAL PrintServer printer

- The DCPS to PrintServer printer interconnect was TCP/IP

- The network connection to the PrintServer printer was lost

This was fixed in DCPS V1.4 by enabling the KEEPALIVE option for such TCP/IP connections. However, if your system is configured for unusually long KEEPALIVE timeouts, you may continue to see this problem. If so, you may recover by deleting the job (DELETE/ENTRY) or stoping the queue (STOP/QUEUE/RESET).

13.2.8 Problems with VFC Files Containing Large Control Fields

If you printed a VFC-formatted file that utilized a fixed-length control field larger than two (2) bytes, the DCPS symbiont could abort with an access violation (ACCVIO) or other error.

13.2.9 ANSI Text Not Wrapped Properly When Using a Form

If you printed ANSI text with a form that specified the /WRAP qualifier, the input records were sometimes broken into output line segments that exceeded the usable line width implied by the form.

13.3 DCPS Version 1.4 Changes

This section describes changes made in DCPS V1.4.

13.3.1 Support for Raw TCP/IP Connections

DCPS V1.4 adds the ability to communicate with printers via raw TCP/IP sockets. Raw TCP is a network protocol that utilizes the TCP/IP protocol directly without any additional interpretation of the TCP data stream. It is supported by many printer Network Interface Cards (NICs), print servers, and terminal servers. Table A–1 lists commonly-used raw TCP/IP port numbers.

There are other printer protocols that layer upon TCP/IP, including CPAP (Common Printer Access Protocol), LPD, and Telnet. DCPS uses CPAP to communicate with DIGITAL PrintServer printers. DCPS does not support LPD or Telnet.

To communicate with your printer using raw TCP/IP, the NIC, print server or terminal server that you use to connect your printer to the network must provide a raw TCP/IP port. Further, this raw TCP/IP port must support bidirectional communication between the printer and your OpenVMS system. DCPS does not work with unidirectional ports, such as those found on the NICs for the DEClaser 3500 and 5100 printers, the RapidPrint 200 and 500, and HP JetDirect cards that interface with the printer via its XIO (versus MIO) slot.

For more information about raw TCP/IP connections and creating queues that utilize them, refer to the *DECprint Supervisor for OpenVMS System Manager's Guide* and comments in DCPS$STARTUP.COM.

13.3.2 "IP_CPAP" Replaces "TCPIP" Connection Type

In previous DCPS versions, a "tcpip/..." syntax was used in DCPS$STARTUP.COM to specify communication with a DIGITAL PrintServer printer via TCP/IP.

In DCPS V1.4, a new "ip_cpap/..." syntax is introduced to replace the "tcpip/..." syntax. CPAP (Common Printer Access Protocol) is the network protocol supported by DIGITAL PrintServer printers, and is just one of many TCP/IP printer-related network protocols. The "tcpip/..." syntax is no longer recommended because of its ambiguity, though DCPS continues to support it.

13.3.3 Automatic Stopping and Restarting of Queues During Installation

When you begin the installation of DCPS, the software scans for existing queues and notes which ones are "active". Active queues are ones that are not stopped (for example, idle, busy, etc.).

If any active queues are found, their names and status are displayed, and you are then asked to decide if the installation procedure should automatically stop and later restart them.

If you do not want the installation procedure to automatically stop them, you are given the options of aborting the installation or continuing with the queues active. Continuing is **NOT** recommended.

If you choose to allow the installation procedure to stop the active queues it listed, it does so after all other installation questions are asked.

If the installation is successful, the listed queues are restarted after the IVP runs. If the installation aborts, is interrupted, etc., they are **NOT** restarted.

13.3.4 Support for Process Software MultiNet for OpenVMS Software

DCPS now supports your use of either DIGITAL TCP/IP Services for OpenVMS software or Process Software MultiNet for OpenVMS software to provide IP connectivity. In DCPS versions V1.3 and earlier, only the former was supported.

Refer to the DECprint Supervisor SPD for more information and specific version requirements.

13.3.5 New Paper Sizes

DCPS supports several new paper sizes, as listed in the table below. You can specify these new sizes as the logical PAGE_SIZE value for any printer, and as the physical SHEET_SIZE value for the printers listed below.

Size Name	Size (mm)	Size (inches)	Printers
9_ENVELOPE	98.4 x 225.4	3.875 x 8.875	Lexmark Optra Rt+
DOUBLEPOSTCARD	148 x 200	5.827 x 7.874	HP4MV, HP5SiMX
SUPER_B	297 x 432	11.7 x 17	HP4MV, HP5SiMX

13.3.6 Device Control Modules Changed for All Printers

The device control modules for all printers were changed, to reduce negative interactions with PC- and Macintosh-generated files. This was done primarily by changing the way in which DCPS uses PostScript dictionaries in the printer. However, if your applications place many definitions in PostScript's "userdict" dictionary, it is possible that these changes may have a negative impact on your print jobs.

The four device control modules for "unrecognized" printers were also changed. If you made any changes to previous versions of these Compaq-supplied modules, you may need to rework your changes. See the *DECprint Supervisor for OpenVMS System Manager's Guide* and comments in the LPS$$UNRECOGNIZED_* modules for more information.

13.3.7 Support for Indexed and Relative Files

DCPS now allows you to print files that utilize an indexed, relative, or sequential file organization. In DCPS versions V1.1 through V1.3, you received a BADFILEORG error if you attempted to print an indexed or relative file.

Indexed and relative files are accessed sequentially, by their primary index and relative record number respectively. This new capability is consistent with the TYPE command.

Note

Indexed and relative files frequently contain binary data. Attempting to print files containing such unprintable binary data can give unpredictable and probably undesirable results.

13.3.8 ALL-IN-1 Compatibility Kit Removed

The ALL-IN-1 compatibility kit, and the option to install it, is no longer part of the DCPS kit for OpenVMS VAX systems. The ALL-IN-1 product now provides the printer support that was provided by the compatibility kit in earlier versions of DCPS.

The compatibility kit was never necessary for OpenVMS Alpha systems.

13.3.9 DCPS User Card Removed

The DCPS kit no longer includes a User Card, either in hardcopy format or online. If you installed a previous version of DCPS, the online version of this card (SYS$COMMON:[SYSHLP.EXAMPLES.DCPS]DCPS-USER-CARD.PS) will exist in the DCPS examples directory. The information on the card is still correct, though no longer complete.

14

DCPS Version 1.3 Information

14.1 DCPS Version 1.3 Highlights

The following list provides a brief description of the significant changes included in DECprint Supervisor Version 1.3. You can find more information for several of these changes elsewhere in these release notes.

- Support for the DIGITAL LN17ps High Performance Network Printer, utilizing either the LAT or Appletalk interface.

- Support for the DIGITAL Colorwriter LSR 2000 printer, utilizing the Appletalk interface.

- Fixes for some problems in previous versions of DCPS.

- Other changes from previous versions.

14.2 DCPS Version 1.3 Fixes

This section lists problems that have been corrected in DCPS V1.3.

14.2.1 Repeated Messages for Queue with Invalid LAT Device

A DCPS queue started with autostart would repeatedly display the following message when the associated LTA device was incorrectly defined:

```
%DCPS-F-LRJNAMEUNKNOWN, Port name is unknown
```

14.2.2 Erroneous Connection Termination Error for DEClaser 5100

DCPS was unable to communicate with the DEClaser 5100 via the NIC card, and would instead consistently fail with CONTERMINATED errors.

14.2.3 Queue Stalls Indefinitely While Printing End of Document

A DCPS queue would sometimes go into a Stalled state while or just before printing the last sheet of a document, and would never resume printing.

14.2.4 DCPS Installation Repeatedly Gets %DCL-W-SYMOVF Errors

When the DCPS installation procedure scanned for existing DCPS print queues, it would repeatedly generate the error message shown below if your system contained a logical name (for example, SYS$PRINT) and a queue name that were identical. The installation would never complete, and you would have to abort it by typing Ctrl/Y.

```
%DCL-W-SYMOVF, no room for symbol definitions - delete some symbols
```

14.2.5 Symbiont Termination When All Message Fields Disabled

If the job controller was started with all message fields disabled, the DCPS
symbiont would terminate with a %STR-F-STRTOOLON message whenever it
attempted to generate a -DCPS-I-JOB_ID message containing additional job
identification information. A message similar to the following would be sent to
OPCOM:

```
%%%%%%%%%%  OPCOM  21-MAR-1996 20:28:01.70  %%%%%%%%%%
Message from user SYSTEM on DANTOO
Process SYMBIONT_15: %F-STRTOOLON, string is too long (greater
than 65535)
```

Symbiont terminations caused by disabled message fields were erroneously
believed to have been completely fixed in DCPS V1.1, as reported in
Section 17.2.5.

14.2.6 Online Help Fixed and Expanded

Some minor errors in the PRINT_PARAMETERS online help were fixed. In
addition, online help about the LN17ps and Colorwriter LSR 2000 printers was
added.

14.2.7 Gray Bars from the LIST Translator Are More Visible

Gray bars generated by the LIST translator to highlight alternate groups of lines
are now more visible for the DEClaser 5100 printer at resolutions above 300x300
dpi and for the Apple LaserWriter IIg printer.

14.2.8 Automatic Scaling When Queue Has PAGE_SIZE and SHEET_SIZE Parameters

DCPS now assumes an implicit NUMBER_UP=1 when all of the following
conditions exist:

- The DCPS-PLUS license is installed.

- Queue default parameters for both PAGE_SIZE and SHEET_SIZE have been
  set to different sizes.

- Your PRINT command does not specify these parameters:

    – PAGE_SIZE

    – SHEET_SIZE

    – INPUT_TRAY

- NUMBER_UP and LAYUP_DEFINITION are not specified for the queue or in
  your print command.

NUMBER_UP=1 scales the logical page size to fit on the physical sheet size. This
fix results in the same behavior as specifying different values for PAGE_SIZE
and SHEET_SIZE on the command line without specifying NUMBER_UP or
LAYUP_DEFINITION.

In previous versions of DCPS, the implicit scaling was assumed for command line
parameters but not for queue parameters. A workaround in those versions was to
include an explicit NUMBER_UP=1 with the queue parameters.

14.2.9 Job Log and Job Trailer Pages Sent to Specified Output Tray

The job log and job trailer pages, if any, are now normally directed to the output tray you specified with the OUTPUT_TRAY parameter. However, if DCPS reports a NOOUTTRAY, OUTTRAYNOTAVL, or OUTTRAYMISMATCH error when initially attempting to select the specified output tray, the job log and trailer pages are instead directed to the printer's default output tray so that you get an indication of the problem.

In previous versions of DCPS, the job log and trailer pages were always sent to the printer's default output tray for non-PrintServer printers. For example, it was previously documented that use of OUTPUT_TRAY=FACE_UP for the HP LaserJet 4SiMX printer would not direct the trailer page to the face-up output tray. This restriction no longer exists.

14.3 DCPS Version 1.3 Changes

14.3.1 New C6 Paper Size

DCPS now supports the C6 (326x460 mm) paper size. You can specify C6 as the logical PAGE_SIZE value for any printer, and as the physical SHEET_SIZE value for the LN17ps printer.

14.3.2 Device Control Modules Changed for UNRECOGNIZED Printer

The four device control modules for "unrecognized" printers, as well as those for other printers, were changed. If you made any changes to previous versions of these Compaq-supplied modules, you may need to rework your changes. See the *DECprint Supervisor for OpenVMS System Manager's Guide* and comments in the LPS$$UNRECOGNIZED_* modules for more information.

15

DCPS Version 1.2 Information

This chapter describes the changes that are in Version 1.2 of the DECprint Supervisor.

15.1 DCPS Version 1.2 Highlights

The following list provides a brief description of the significant changes included in DECprint Supervisor Version 1.2. You can find more information for several of these changes elsewhere in these release notes.

- DCPS Version 1.2 requires less memory and pagefile space. This is achieved by allowing a supervisor process to control multiple print queues (run "multistreamed"). This allows a system to have far fewer DCPS supervisor processes, and thus alleviates memory and pagefile consumption.

- DCPS Version 1.2 reduces idle queue processor overhead by allowing supervisor processes to control multiple print queues, thereby reducing the number of supervisor processes and the overhead imposed by each.

- DCPS now supports printing to printers on an AppleTalk network from OpenVMS Alpha systems.

- AppleTalk printer names may now be specified with 8-bit accented characters.

- The ANSI translator has been fixed and no longer abnormally truncates lines when printing with A4 page sizes in landscape orientation.

- When printing to serial- and LAT-connected printers, DCPS is less aggressive on job startup. Previously, DCPS could cause a print job from a UNIX host or LATSYM to abort if the job had completed on that host, but was still printing at the printer. DCPS now waits for the printer to stop printing before it begins the new job. A new DCPS logical name can be defined to restore the old behavior, if needed.

- Previous versions of DCPS could hang, especially on AppleTalk connected printers, if a job name contained the "]" character. This problem is corrected in this release.

- Under rare circumstances, DCPS V1.1 and V1.1A could exit with the following message "%DCPS-F-INSEF, insufficient event flags". This problem is corrected in this release.

- New system logical names are now recognized for changing DCPS modes and behaviors to other than the defaults.

- The startup template command procedure, DCPS$STARTUP.TEMPLATE has been updated to show how to configure the print supervisor for multistreamed operation.

- The kit installation procedure and IVP have been enhanced to check for and report running DCPS queues and components that might cause unpredictable behavior during an upgrade.

- This release also contains several other corrections and minor enhancements to the product.

15.2 DCPS Version 1.2 Fixes

This section describes problems that are fixed in DCPS Version 1.2.

15.2.1 Truncated Lines When A4 Page Is Printed Landscape

Beginning with Version V1.1A the ANSI translator used a modified definition of the size of the printing area for an A4 page printed landscape. However, this new definition sometimes caused lines to be abnormally truncated. This problem has been fixed. See Section 16.1.2.

15.2.2 AppleTalk Printer Names with Multinational Characters

If an AppleTalk printer name includes multinational characters (for example, accented characters), DCPS did not properly handle these names and could not find the printer on the AppleTalk network. The characters supplied for the /ON qualifer use the DECMCS character set. These characters had to be converted to the Macintosh character set to be used on the AppleTalk network. With Version 1.2, this conversion now occurs.

When multinational characters are used, the printer name printed on the bottom of separation pages may be printed in the wrong character set.

15.2.3 DELETE/ENTRY and "(DCc) Circuit connect failure"

At apparently random times, it was possible for a PrintServer printer to display the a "(DCc) Circuit connect failure" error and stop responding to print requests. This problem occured as a result of a DELETE/ENTRY command if the job number on the PrintServer printer was 100 or greater. DCPS now correctly handles DELETE/ENTRY and no longer causes this error.

15.2.4 Speed of Printing of Certain File Types

Changes have be made to improve how files with variable length records are handled by the symbiont. These changes can improve the speed at which these files print.

15.2.5 Handling of Communications Problems on Serial Interconnect

In previous releases, there could be a delay of up to 4 minutes to free the system resources associated with a serial device. This could occur when a STOP/QUEUE/RESET command was issued when a job was printing, but a communication problem had occurred. When such a delay occurred, the queue could not be restarted soon after it had been stopped. Now when a communication problem is detected, the system resources are freed more quickly, and a print queue can be restarted soon after it is stopped.

15.2.6 DCPS$*queuename*_PID Logical Name and Startup Errors

With V1.1A, if a queue failed to start, the logical name DCPS$*queuename*_PID would be left in the system logical name tables. This no longer occurs.

15.2.7 Looping When Handling Messages with ']' in Job: field

DCPS now properly handles PostScript printer messages with a ']' character in the job name. Parsing such a message in previous versions would result in an infinite loop. This was most likely to be noticed when printing to a printer on an AppleTalk network.

15.2.8 Handling of Long Device Names in DCPS$STARTUP.COM

DCPS V1.1A did not properly account for the SCSNODE name when determining the value for the /ON qualifier from the P2 value supplied to DCPS$EXECUTION_QUEUE.COM by DCPS$STARTUP.COM. If the node's SCSNODE name was less then 6 characters, an error could occur when the queue was started. This has been fixed.

15.2.9 Form Setup Modules and Multiple File Jobs

A setup module specified by the /SETUP qualifier of a form is sent to the printer just once at the beginning of a print job if the setup module is PostScript. If the job included multiple files or copies of a file, the PostScript context established by this setup module could be lost and the rest of the files would not print as expected. This happened because, when needed, DCPS sends the PostScript 'newsheet' operator between files to ensure new files start on new sheets. The PostScript context is now saved before executing 'newsheet', and restored after executing 'newsheet'.

15.2.10 Interrupting Busy Printers When a Job Starts

Previous versions of DCPS, when used with serially-connected printers, used an aggressive synchronization sequence to gain control of the printer's PostScript interpreter. This is no longer the case, as it occasionally caused problems when a printer was used in a shared multi-host environment.

However, if you rely on DCPS's previous ability to abort errant PostScript jobs on one queue by starting a job on another queue, you can define a DCPS logical name to restore the previous functionality, as described in the *DECprint Supervisor for OpenVMS System Manager's Guide*.

15.2.11 Suppressing PostScript Synchronization When a Job Starts

Defining the logical name DCPS$*queuename*_NO_SYNC causes the DCPS symbiont to avoid using its usual synchronization sequence on printers other than PrintServer printers. This includes printers that use LAT or raw TCP/IP connections on built-in Network Interface Cards (NICs). It has no effect when using printers connected via other interconnects. This logical name is supported by Versions 1.2 and later of DCPS to help avoid problems that have been reported in past versions.

15.2.12 DDIF Files with Invalid Parameter Values

The DDIF translators have been modified to handle files with invalid values for some parameters. Specifically, if the value for either the "PixelPath" or "LineProgression" parameter is invalid, then the default value for that parameter is assumed.

15.2.13 Insufficient Event Flags

Under some circumstances, DCPS V1.1 and V1.1A exits with the following message:

```
%DCPS-F-INSEF, insufficient event flags
```

This problem might occur with LAT-connected printers when more than one host attempts a connection to the printer at the same time. This problem is corrected in Version 1.2.

15.2.14 PostScript Operator findfont Has Been Modified

The example file [SYSHLP.EXAMPLES.DCPS]PS_SUPPLEMENT.PS has been changed. The re-definition of the PostScript operator 'findfont' has been modified to minimize naming conflicts with other definitions of the keyword 'findfont'. Also, if PS_SUPPLEMENT.PS is loaded more than once, the 'findfont' operator is not re-defined, and previous problems due to recursion no longer occur. The redefinition of the PostScript operator 'findfont' has been modified to minimize naming conflicts with other definitions of the keyword 'findfont'. Also, if PS_SUPPLEMENT.PS is loaded more than once, the 'findfont' operator is not redefined, and previous problems due to recursion no longer occur.

15.2.15 OUTPUT_TRAY=LCOS Not Supported for PrintServer 17 Printers

You can now use the OUTPUT_TRAY=LCOS parameter to select the large capacity output stacker on PrintServer 17 printers.

15.3 DCPS Version 1.2 Changes

This section describes changes in DCPS Version 1.2.

15.3.1 Running DECprint Supervisor as a Multistreamed Process

Beginning with Version 1.2, a DECprint Supervisor process is capable of running as a multistreamed symbiont process.

15.3.2 AppleTalk Interconnect Supported on OpenVMS Alpha Systems

Printing to printers on an AppleTalk network from an OpenVMS Alpha system is now supported. The AppleTalk for OpenVMS network software from PATHWORKS for OpenVMS (Macintosh) V1.3 or later must be installed and running.

15.3.3 DCPS Includes Files for the DEClaser 3500 FAX Option

DCPS includes example files for the the DEClaser 3500 printer's FAX features.

15.3.4 The Network Printer Setup Utility Updated

The Network Printer Setup Utility has been updated. The kit can be found in SYS$COMMON:[SYSHLP.EXAMPLES.DCPS.NETPRINT] in the file NETPRX11.ZIP. The new version works with V5.0A and V5.1 of PATHWORKS for OpenVMS (LAN Manager). This version of the Network Printer Setup Utility is also supplied on the PATHWORKS Unsupported Utilities Kit.

15.3.5 Logical Name to Enable Device Control Library Caching

The system logical name DCPS$DEVCTL_CACHE (with no queue name specified) can be defined to specify that device control library caching is enabled for all DCPS print execution queues on that system. Also see Section 17.1.4.

15.3.6 DCPS$STARTUP.TEMPLATE Updated

The file SYS$STARTUP:DCPS$STARTUP.TEMPLATE has been modified to provide example definitions for both DCPS$MAX_STREAMS and DCPS$DEVCTL_CACHE.

15.3.7 Executable Components Check for Compatible Versions

Beginning with DCPS Version 1.2, the executable components attempt to ensure they are a matched set. If a mis-match occurs, DCPS reports an error when the queue starts.

15.3.8 Reducing the Amount of Memory and Idle Time CPU

DCPS V1.1 and V1.1A use considerably more memory than previous versions of DCPS. This use of memory can become a significant problem when many DCPS queues are started on a system. DCPS Version 1.2 and later address this problem by reducing the peak memory requirements of DCPS and by allowing DCPS to run multistreamed.

Also, beginning with DCPS V1.1, DECthreads is used to implement the numerous functions of DCPS. All processes that use DECthreads execute periodically to determine if any threads can run. Even when no jobs are printing, DECthreads causes a DCPS process to run to determine if any threads can run. If there are many DCPS queues started on a system, the scheduling and periodic execution of all these processes can use a significant amount of CPU time. This problem is resolved by running DCPS as a multistreamed process, thereby reducing the number of symbiont processes that must execute. Also, DCPS symbiont processes never get swapped out of memory because they periodically execute.

There are several factors to consider to determine an appropriate number of queues per DCPS symbiont process including:

- DCPS Version 1.2 must be configured to support at least four execution queues to reduce the memory requirements to that of DCPS V1.0C.

- You can reduce the number of process slots taken by DCPS by increasing the number of queues per process. This will free up process slots. By reducing the number of DCPS symbiont processes, you reduce the number of DECthread processes that must run periodically, which improves system performance.

- With Version 1.2 and later of DCPS, even though a DECprint Supervisor process can be configured to support more than one execution queue, DCPS can translate only one file at a time. To avoid contention for translators, when a stream (queue) in a process needs a translator that is already in use, the translator for that stream is started in a separate temporary process. This can impact performance if your site primarily uses one translator, and print queues are generally busy. To reduce the likelihood of a impact on performance, choose a smaller value for DCPS$MAX_STREAMS.

- The maximum number of queues per process is 32. This limit is imposed by the OpenVMS queue manager.

- If DCPS is configured to support only one print queue per process (the default), DCPS Version 1.2 uses less memory than V1.1 or V1.1A, but more memory than DCPS V1.0C.

- A DECprint Supervisor process running multiple print queues represents a potential single point of failure. If the supervisor process fails, or someone stops the process, then several queues are affected.

16

DCPS Version 1.1A Information

This chapter describes fixes and changes that are new to DCPS V1.1A.

16.1 DCPS Version 1.1A Fixes

This section describes problems that are fixed in DCPS Version 1.1A.

16.1.1 Corrected Timeout Problem with LAT Protocol on Network Cards

A problem occurred on DCPS print queues connected to printers using the LAT protocol on a network card. If the printer was turned off for a long period of time, say for the night, and a job was submitted while the printer was off, the queue would stop with a fatal timeout message. This behavior has been corrected and printing will resume when the printer is turned on.

16.1.2 ANSI Translator Printing with A4 Landscape

All versions of the ANSI translator prior to DCPS V1.1A had a problem printing 66 lines of text in landscape mode on A4 paper. The translator has been fixed by altering the vertical spacing and printable area that it uses.

If you use preprinted forms that depend on the translator's old behavior, you can define a DCPS logical name to retain that behavior. See the *DECprint Supervisor for OpenVMS System Manager's Guide* for more information.

16.1.3 PCL Translator Handles Duplexing on PostScript Level 2 Printers

The PCL translator now generates PostScript code that will print correctly on PostScript Level 2 printers when the file includes a duplex escape sequence.

16.1.4 Correction for ANSI Performance Problem on PrintServer Printers

There is a version skew problem in the PrinterServer ANSI prologue file in DCPS V1.1 and the version number stored in the resource file. The problem may cause the ANSI prologue to be downloaded for each ANSI print job. To correct the problem issue the following command:

```
@SYS$COMMON:[SYSHLP.EXAMPLES.DCPS]UPDATE-ANSI-PROLOGUE
```

16.1.5 Remote Console Aborted Jobs on PrintServer Printers

If a print job was submitted to a PrintServer printer with DCPS V1.1, and aborted via the remote console, the job would be requeued. This problem is fixed in DCPS V1.1A so the print job is deleted from the queue.

16.1.6 New Format for the Log Files

There were several problems with the log file mechanism in DCPS V1.0, V1.0B, and V1.0C. These problems were fixed in DCPS V1.1, but not communicated to you.

The new log file mechanism clearly displays control characters and formats data in an easy-to-read format. However, programs that read the log file may not operate properly.

16.1.7 Device Control Module Cache Problem Corrected

In DCPS V1.1, if there was more than one device control library, and DCPS$DEVCTL.TLB was not the first library in the library search list, and caching was enabled, the symbiont issued an error message stating that the required device control modules could not be found and stopped the queue. This problem is fixed in DCPS V1.1A.

16.1.8 Problem with P2 in DCPS$EXECUTION_QUEUE.COM Fixed

With DCPS V1.1, device names supplied in P2 for DCPS$EXECUTION_ QUEUE.COM were turned into logical names if their length exceeded 31 characters. In DCPS V1.1A, device names are not treated as logical names until 39 characters, the maximum size for the /ON qualifier.

16.2 DCPS Version 1.1A Changes

16.2.1 Process ID Logical Name Created by Symbiont

The logical name, DCPS$*queuename*_PID, is defined by the symbiont when it starts executing.

17

DCPS Version 1.1 Information

This chapter describes changes included in DCPS Version 1.1.

17.1 DCPS Version 1.1 New Features

This section describes the new features in DCPS Version 1.1.

17.1.1 New Interconnects and New Device Specification Syntax

DCPS Version 1.1 adds support for printing to desktop printers via AppleTalk, and to DIGITAL PrintServer printers using TCP/IP. Refer to the *DECprint Supervisor for OpenVMS System Manager's Guide* for the details.

Note

The device specification syntax allows a device name to be longer than 39 characters. Those device names that are longer than 39 characters display as "DCPS$" for the value of the /ON qualifier.

The device name is stored in logical name DCPS$*queuename*_DEVICE_ NAME.

17.1.2 Native PCL Accessible on Some Printers

DCPS V1.1 can print PCL jobs, including those which specify PCL Level 5 commands, directly to certain printers without using PCL-to-PostScript translation. Version 1.1 uses the native PCL capability of those printers when a job requires no PostScript processing.

Not all printers that provide PCL emulation are supported by DCPS in this manner. Printers that are supported for native PCL printing are listed here:

- DEClaser 5100

- DIGITAL PrintServer 17, with PrintServer Supporting Host V5.0 software and at least 12MB memory

- DIGITAL PrintServer 17/600, with PrintServer Supporting Host V5.0 software and at least 12MB memory

- HP LaserJet 3Si with PostScript option

- HP LaserJet 4M

- HP LaserJet 4ML

- HP LaserJet 4MP

- HP LaserJet 4SiMX

17.1.3 Suppressing the OPCOM Message "User Name Not Found"

When DCPS is executing in a cluster environment where the UAF files are different between cluster members, an OPCOM message is displayed and the job prints normally:

```
%%%%%%%%%%  OPCOM   1-JAN-1994 18:43:55.87  %%%%%%%%%%
Message from user SYSTEM on LITERA
Queue SHARIE: %DCPS-W-USERNOTFOUND, user name FOO not found,
no log files created
-RMS-E-RNF, record not found
```

Because the username cannot be found, the symbiont cannot perform the "MESSAGES=KEEP" or "MESSAGES=PRINT" parameter request.

To keep this OPCOM message from being displayed for every job, define the logical name DCPS$*queuename*_IGNORE_UNKNOWN_USER to be one (1).

17.1.4 Device Control Library Cache Feature

DCPS V1.1 has a new device control library caching feature that optimizes the retrieval of certain commonly-used PostScript device control modules. Refer to the *DECprint Supervisor for OpenVMS System Manager's Guide* for the details.

17.1.5 ANSI Prologue File

A new ANSI prologue is included as part of the new ANSI translator in DCPS V1.1 and is also available as a separate file. The file is located at SYS$COMMON:[SYSHLP.EXAMPLES.DCPS]LPS_ANSI_PROLOGUE.PS. The prologue is incompatible with the previous ANSI translators.

A PostScript printer can hold only one version of an ANSI prologue. To minimize performance problems, after installing the DCPS V1.1 software, power-cycle non-PrintServer printers to force the DECprint Supervisor software to persistently load the new prologue.

To update the ANSI translator prologue on your PrintServer Supporting Host system, enter the following command:

```
@SYS$COMMON:[SYSHLP.EXAMPLES.DCPS]UPDATE-ANSI-PROLOGUE.COM
```

Then reboot your PrintServer printer.

This .COM file assumes that the DECprint Supervisor software is installed on your supporting host system. In addition, all PrintServer printers are updated.

17.2 DCPS Version 1.1 Fixes

This section lists problems that have been corrected since DCPS V1.0 was released.

17.2.1 Separator Tray Logical Name Works on Generic and Execution Queues

Previously, the logical name DCPS$*queuename*_SEPARATOR_TRAY worked only on generic queues. It now works on execution queues as well.

17.2.2 Suppressed Messages NOPAGEREGIONOP and NOSETPAGEDEVICE

These undocumented informational messages no longer occur.

17.2.3 Fixed Problems Printing VFC Files

Printing a VFC-formatted file with a print file carriage control code of hex 8C now works correctly.

DCPS does not support printing VFC-formatted and other files whose organization is RELATIVE or INDEXED. DCPS now detects this condition and returns a file error message.

17.2.4 Increased Range of PAGE_LIMIT to 999999

The prior limit for either starting or ending page was 9999. It is now 999999.

17.2.5 Fixed Abort when All Message Fields Disabled

DCPS will no longer terminate with the %STR-F-STRTOOLON message if job controller is started with all message content disabled using the following command:

```
$ SET MESSAGE/NOTEXT/NOFACILITY/NOIDENT/NOSEVERITY
```

17.2.6 Fixed ANSI Jobs with "Sinking Accented Capital Letters"

The error with the ANSI data type in which accented capital letters such as Á and É would print lower than surrounding characters on some types of printers has been fixed.

17.2.7 Library Search List Correctly Searched

With DCPS V1.0, if you defined the SYS$LIBRARY logical name to be a search list, the DECprint Supervisor software failed to find site-specific device control libraries placed in site-specific library directories.

DCPS V1.1 corrects this problem. The supervisor correctly searches all directory elements of the SYS$LIBRARY logical name for specified device control libraries.

17.2.8 Empty Setup Module No Longer Hangs Supervisor

DCPS V1.0 queues would stall and the supervisor would hang in an infinite compute loop if it was instructed to load a setup module with no contents. The DCPS V1.1 supervisor does not exhibit this behavior.

17.2.9 Corrected PostScript Handling in Layup

DCPS now correctly handles idtransform and setpagedevice commands in the layup facility.

17.2.10 LCIT Keyword Now Recognized for PrintServer 17

You can now use the INPUT_TRAY=LCIT parameter to select the large capacity input tray on the PrintServer 17 printer.

17.2.11 Fixed OUTPUT_TRAY=SIDE for PrintServer 17

The parameter OUTPUT_TRAY=SIDE now selects the lower tray for all members of the PrintServer family.

17.2.12 Fixed Delay for Manual Feed with Apple and HP Printers

New code activates a delay for insertion of paper into manual feed slot with HP LaserJet III, IIID and IIISi and supported Apple LaserWriter printers.

17.3 DCPS Version 1.1 Changes

17.3.1 Support for Non-Compaq/DIGITAL Printers

The DCPS Version 1.1 software adds support for additional non-DIGITAL printers if you install the DCPS-Open license.

The following printers are among those supported by DCPS Version 1.1:

- HP printers

  - LaserJet 4M, 4ML, 4MP, 4SiMx

    Native PCL mode supported

  - LaserJet IIISi printer

    PostScript Level 2 option

  - PaintJet XL300

    Provides color printing

- Apple LaserWriter Printers

  - Pro 600, Pro 630

See the DECprint Supervisor SPD for a complete list of supported printers.

17.3.2 Enhancements to the PCL Translator

The PCL-to-PostScript translator has been modified to include the following features.

- The following escape sequence has been implemented:

  ```
  <ESC>&l9D
  ```

  This escape sequence sets the line spacing to 9 lines per inch.

- The following escape sequence has been implemented:

  ```
  <ESC>&l5H
  ```

  This escape sequence selects an input tray. The command will execute the intermediate PostScript operator 'setlcittray', which by default selects the PostScript tray corresponding to the number 3. See the *DECprint Supervisor for OpenVMS User's Guide* for more information about redefining PCL tray selection operators.

- The top and left offset commands are implemented.

- Executing the command to set both the left and right margin to 0 has changed to give the behavior observed on the LaserJet IID; specifically, the margins are set to give the maximum width for the selected page size.

- The LaserJet IID does not require that a raster begin with the begin raster command. The translator has been made compatible with the IID, although it is recommended that a raster begin with the begin raster command.

- The PCL translator issues a PostScript save operation before executing any PostScript and a PostScript restore operation when the translated file finishes printing. All virtual memory used by the translator is recovered.

17.3.3 LN03 Image Printer

The DCPS Version 1.1 software does not support the LN03 Image Printer (LN03Q). If you rely on this type of printer, it is recommended that you use the DECprint Printing Services (CPS) Version 4.1 product to drive the printers.

An alternative to the LN03 Image Printer is the PrintServer image printing technology. DCPS Version 1.1, when used with PrintServer Software Version 5.0 or later, takes advantage of any image-printing enhancements in your PrintServer printer.

Image printing requires the DCPS-Plus license.

17.3.4 The State of a Printer Is Not Known Until a Job Prints

Beginning with DCPS V1.1, the functions that are performed when a queue is started have become consistent. regardless of the interconnect. Specifically, when a queue is started there is no attempt to make a connection to the printer. This is to minimize the possibility that a queue will not start. This is particularly important because there should be no errors or delays when queues are started while a system is booting. This change primarily affects printers directly connected to a system (TTAn or TXAn device). Previous versions of DCPS attempted a connection to a directly connected printer when the queue was started and could detect if the printer was powered on. Now, the state of a printer and the interconnect are not known until a job is printed.

17.3.5 New Behavior for Serial Interconnect

When communications problems arise on the serial interconnect, the symbiont will keep listening for up to 4 minutes before disconnecting from the printer. Therefore, under some conditions, the serial device is not released immediately after a STOP/QUEUE/RESET command is issued.

A

Raw TCP/IP Port Numbers

When setting up a DCPS queue using a raw TCP/IP connection, check the documentation for your network interface card (NIC), print server or terminal server to determine the number of its raw TCP/IP port (if it has one). The raw TCP/IP port must support bidirectional communication between the printer and your OpenVMS system.

Table A–1 shows the port numbers for some commonly-used devices.

Table A–1   Raw TCP/IP Port Numbers

20nn	DECserver terminal servers, where "nn" is the physical port number
2501	DIGITAL LN17ps and DIGITAL Laser Printer LN17+ps
	Emulex NICs
3001	DIGITAL Laser Printer LN15 and LN15+
	DIGITAL RapidPrint 500 print server
6869	DIGITAL Laser Printer LN20, LN40 and LNC02
9100	Compaq Laser Printer LN16, LN32 and LNM40
	GENICOM LN and microLaser printers
	GENICOM RapidPrint MPS100 print server
	Hewlett-Packard LaserJet printers
	Lexmark Optra printers
	Tektronix Phaser printers
	Xerox DocuPrint N printers
	Hewlett-Packard JetDirect, XCD, and Lexmark NICs

B

List of Files Installed on Alpha Systems

```
DCPS020.RELEASE_NOTES                   [SYSHLP]
DCPS$HELP.HLP                           [SYSHLP]
DCPS$SMBSHR.EXE                         [SYSLIB]
DCPS$SMB.EXE                            [SYSEXE]
DCPS$MSG.EXE                            [SYSMSG]
DCPS$TRNPRC.EXE                         [SYSLIB]
DCPS$BE_SERIAL.EXE                      [SYSLIB]
DCPS$BE_CPAP.EXE                        [SYSLIB]
DCPS$BE_APPLETALK.EXE                   [SYSLIB]
TRN$DDIF_PS.EXE                         [SYSLIB]
TRN$DDIF_IMAGE.EXE                      [SYSLIB]
TRN$ANSI_PS.EXE                         [SYSLIB]
TRN$PROPRINTER_PS.EXE                   [SYSLIB]
TRN$PCL_PS.EXE                          [SYSLIB]
TRN$LIST_PS.EXE                         [SYSLIB]
TRN$REGIS_PS.EXE                        [SYSLIB]
TRN$TEK4014_PS.EXE                      [SYSLIB]
DCPS$DEVCTL.TLB                         [SYSLIB]
DCPS$STARTUP.TEMPLATE                   [SYS$STARTUP]
DCPS$REQUIRED.COM                       [SYS$STARTUP]
DCPS$EXECUTION_QUEUE.COM                [SYS$STARTUP]
DCPS$GENERIC_QUEUE.COM                  [SYS$STARTUP]
DCPS$IVP.COM                            [SYSTEST]
DCPS$IVP_ANSI.DAT                       [SYSTEST.DCPS]
DCPS$IVP_POST.DAT                       [SYSTEST.DCPS]
DCPS$IVP_PCL.DAT                        [SYSTEST.DCPS]
DCPS$IVP_PROPRINTER.DAT                 [SYSTEST.DCPS]
DCPS$IVP_LIST.DAT                       [SYSTEST.DCPS]
DCPS$IVP_REGIS.DAT                      [SYSTEST.DCPS]
DCPS$IVP_TEK4014.DAT                    [SYSTEST.DCPS]
LPS$SINGLEHOLES.LUP                     DCPS$LAYUP:
LPS$DOUBLEHOLES.LUP                     DCPS$LAYUP:
LPS$HOLES.LUP                           DCPS$LAYUP:
LPS$NUP.LUP                             DCPS$LAYUP:
COLOR-PRINTER-FULL-PAGE.LUP             DCPS$LAYUP:
COLORWRITER-2000-FULL-PAGE.LUP          DCPS$LAYUP:
PROPRINTER-FULL-PAGE.LUP                DCPS$LAYUP:
FULL-A4-LANDSCAPE.LUP                   DCPS$LAYUP:
CPS_TO_DCPS_STARTUP.COM                 [SYS$STARTUP]
LPS_ANSI_PROLOGUE.PS                    [SYSHLP.EXAMPLES.DCPS]
UPDATE-ANSI-PROLOGUE.COM                [SYSHLP.EXAMPLES.DCPS]
FONT_DOWNLOADER.COM                     [SYSHLP.EXAMPLES.DCPS]
LPS$SET_PRINTER_NAME.PS                 [SYSHLP.EXAMPLES.DCPS]
LPS$SET_TIMEOUT.PS                      [SYSHLP.EXAMPLES.DCPS]
DCW1000_CONFIG.PS                       [SYSHLP.EXAMPLES.DCPS]
DCW1000_DEVPARAM.PS                     [SYSHLP.EXAMPLES.DCPS]
DCW1000_STARTPG.PS                      [SYSHLP.EXAMPLES.DCPS]
DCW1000_NOSTRTPG.PS                     [SYSHLP.EXAMPLES.DCPS]
DCW1000_PRNTCNFG.PS                     [SYSHLP.EXAMPLES.DCPS]
DCW1000_PSCRIPT.PS                      [SYSHLP.EXAMPLES.DCPS]
FAX_3500_PRINTME.PS                     [SYSHLP.EXAMPLES.DCPS]
DL3500_SEND_FAX_PS.PS                   [SYSHLP.EXAMPLES.DCPS]
DL3500_SEND_FAX_PS_SENDPS.PS            [SYSHLP.EXAMPLES.DCPS]
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DL3500_SEND_FAX_TEXT.PS                      [SYSHLP.EXAMPLES.DCPS]
DL3500_SEND_FAX_TEXT_SENDPS.PS               [SYSHLP.EXAMPLES.DCPS]
DCPS$FILE_EXTENSION_DATA_TYPE.DAT_DEFAULT [SYSLIB]
UNSOLICITED-PJL-FIX.COM                      [SYSHLP.EXAMPLES.DCPS]
IGNORE-A-SIZE.PS                             [SYSHLP.EXAMPLES.DCPS]
DCPS$COMMON-PORT-SETTINGS.COM                [SYSHLP.EXAMPLES.DCPS]
DCPS$CONFIG-PRINTER-PORT.COM                 [SYSHLP.EXAMPLES.DCPS]
DCPS$DS100-PORT-SETTINGS.COM                 [SYSHLP.EXAMPLES.DCPS]
DCPS$DS200-PORT-SETTINGS.COM                 [SYSHLP.EXAMPLES.DCPS]
DCPS$DS500-PORT-SETTINGS.COM                 [SYSHLP.EXAMPLES.DCPS]
DCPS$GET-DS100-PORT-GROUPS.COM               [SYSHLP.EXAMPLES.DCPS]
DCPS$SET-DS-GROUPS.COM                       [SYSHLP.EXAMPLES.DCPS]
DCPS$SET-DS100-GROUPS.COM                    [SYSHLP.EXAMPLES.DCPS]
DCPS$SAVE-DS500-PORT.COM                      [SYSHLP.EXAMPLES.DCPS]
LPS$STATUSDICT.PS                            [SYSHLP.EXAMPLES.DCPS]
CONFIDENTIAL.PS                              [SYSHLP.EXAMPLES.DCPS]
INSTALL-PS-SUPPLEMENT.COM                    [SYSHLP.EXAMPLES.DCPS]
PS_SUPPLEMENT.PS                             [SYSHLP.EXAMPLES.DCPS]
NETPRX11.ZIP                                 [SYSHLP.EXAMPLES.DCPS.NETPRINT]
README.TXT                                   [SYSHLP.EXAMPLES.DCPS.NETPRINT]
UNZIP50.EXE                                  [SYSHLP.EXAMPLES.DCPS.NETPRINT]
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C

List of Files Installed on VAX Systems

```
DCPS020.RELEASE_NOTES                    [SYSHLP]
DCPS$HELP.HLP                            [SYSHLP]
DCPS$SMBSHR.EXE                          [SYSLIB]
DCPS$SMB.EXE                             [SYSEXE]
DCPS$MSG.EXE                             [SYSMSG]
DCPS$TRNPRC.EXE                          [SYSLIB]
DCPS$BE_SERIAL.EXE                       [SYSLIB]
DCPS$BE_CPAP.EXE                         [SYSLIB]
DCPS$BE_APPLETALK.EXE                    [SYSLIB]
TRN$DDIF_PS.EXE                          [SYSLIB]
TRN$DDIF_IMAGE.EXE                       [SYSLIB]
TRN$ANSI_PS.EXE                          [SYSLIB]
TRN$PROPRINTER_PS.EXE                    [SYSLIB]
TRN$PCL_PS.EXE                           [SYSLIB]
TRN$LIST_PS.EXE                          [SYSLIB]
TRN$REGIS_PS.EXE                         [SYSLIB]
TRN$TEK4014_PS.EXE                       [SYSLIB]
DCPS$DEVCTL.TLB                          [SYSLIB]
DCPS$STARTUP.TEMPLATE                    [SYS$STARTUP]
DCPS$REQUIRED.COM                        [SYS$STARTUP]
DCPS$EXECUTION_QUEUE.COM                 [SYS$STARTUP]
DCPS$GENERIC_QUEUE.COM                   [SYS$STARTUP]
DCPS$IVP.COM                             [SYSTEST]
DCPS$IVP_ANSI.DAT                        [SYSTEST.DCPS]
DCPS$IVP_POST.DAT                        [SYSTEST.DCPS]
DCPS$IVP_PCL.DAT                         [SYSTEST.DCPS]
DCPS$IVP_PROPRINTER.DAT                  [SYSTEST.DCPS]
DCPS$IVP_LIST.DAT                        [SYSTEST.DCPS]
DCPS$IVP_REGIS.DAT                       [SYSTEST.DCPS]
DCPS$IVP_TEK4014.DAT                     [SYSTEST.DCPS]
LPS$SINGLEHOLES.LUP                      DCPS$LAYUP:
LPS$DOUBLEHOLES.LUP                      DCPS$LAYUP:
LPS$HOLES.LUP                            DCPS$LAYUP:
LPS$NUP.LUP                              DCPS$LAYUP:
COLOR-PRINTER-FULL-PAGE.LUP              DCPS$LAYUP:
COLORWRITER-2000-FULL-PAGE.LUP           DCPS$LAYUP:
PROPRINTER-FULL-PAGE.LUP                 DCPS$LAYUP:
FULL-A4-LANDSCAPE.LUP                    DCPS$LAYUP:
CPS_TO_DCPS_STARTUP.COM                  [SYS$STARTUP]
LPS_ANSI_PROLOGUE.PS                     [SYSHLP.EXAMPLES.DCPS]
UPDATE-ANSI-PROLOGUE.COM                 [SYSHLP.EXAMPLES.DCPS]
FONT_DOWNLOADER.COM                      [SYSHLP.EXAMPLES.DCPS]
LPS$SET_PRINTER_NAME.PS                  [SYSHLP.EXAMPLES.DCPS]
LPS$SET_TIMEOUT.PS                       [SYSHLP.EXAMPLES.DCPS]
DCW1000_CONFIG.PS                        [SYSHLP.EXAMPLES.DCPS]
DCW1000_DEVPARAM.PS                      [SYSHLP.EXAMPLES.DCPS]
DCW1000_STARTPG.PS                       [SYSHLP.EXAMPLES.DCPS]
DCW1000_NOSTRTPG.PS                      [SYSHLP.EXAMPLES.DCPS]
DCW1000_PRNTCNFG.PS                      [SYSHLP.EXAMPLES.DCPS]
DCW1000_PSCRIPT.PS                       [SYSHLP.EXAMPLES.DCPS]
FAX_3500_PRINTME.PS                      [SYSHLP.EXAMPLES.DCPS]
DL3500_SEND_FAX_PS.PS                    [SYSHLP.EXAMPLES.DCPS]
DL3500_SEND_FAX_PS_SENDPS.PS             [SYSHLP.EXAMPLES.DCPS]
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DL3500_SEND_FAX_TEXT.PS                     [SYSHLP.EXAMPLES.DCPS]
DL3500_SEND_FAX_TEXT_SENDPS.PS              [SYSHLP.EXAMPLES.DCPS]
DCPS$FILE_EXTENSION_DATA_TYPE.DAT_DEFAULT [SYSLIB]
DCPS$DELETE-LPS-CLIENT.COM                  [SYSHLP.EXAMPLES.DCPS]
UNSOLICITED-PJL-FIX.COM                     [SYSHLP.EXAMPLES.DCPS]
IGNORE-A-SIZE.PS                            [SYSHLP.EXAMPLES.DCPS]
DCPS$COMMON-PORT-SETTINGS.COM               [SYSHLP.EXAMPLES.DCPS]
DCPS$CONFIG-PRINTER-PORT.COM                [SYSHLP.EXAMPLES.DCPS]
DCPS$DS100-PORT-SETTINGS.COM                [SYSHLP.EXAMPLES.DCPS]
DCPS$DS200-PORT-SETTINGS.COM                [SYSHLP.EXAMPLES.DCPS]
DCPS$DS500-PORT-SETTINGS.COM                [SYSHLP.EXAMPLES.DCPS]
DCPS$GET-DS100-PORT-GROUPS.COM              [SYSHLP.EXAMPLES.DCPS]
DCPS$SET-DS-GROUPS.COM                      [SYSHLP.EXAMPLES.DCPS]
DCPS$SET-DS100-GROUPS.COM                   [SYSHLP.EXAMPLES.DCPS]
DCPS$SAVE-DS500-PORT.COM                    [SYSHLP.EXAMPLES.DCPS]
LPS$STATUSDICT.PS                           [SYSHLP.EXAMPLES.DCPS]
CONFIDENTIAL.PS                             [SYSHLP.EXAMPLES.DCPS]
INSTALL-PS-SUPPLEMENT.COM                   [SYSHLP.EXAMPLES.DCPS]
PS_SUPPLEMENT.PS                            [SYSHLP.EXAMPLES.DCPS]
NETPRX11.ZIP                                [SYSHLP.EXAMPLES.DCPS.NETPRINT]
README.TXT                                  [SYSHLP.EXAMPLES.DCPS.NETPRINT]
UNZIP50.EXE                                 [SYSHLP.EXAMPLES.DCPS.NETPRINT]
```